

ICD-10-CM General Equivalence Mappings (GEMs)

Coordination & Maintenance Committee
Meeting

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CMS Headquarters—Baltimore

Codes are...

- the currency of data transactions
 - monitor health status of a defined population
 - track trends in disease and treatment
 - optimize delivery of healthcare
 - govern reimbursement

Code Mapping & I-10 Implementation

- Mappings will be used to
 - convert and test systems
 - link data in long-term clinical studies
 - develop application-specific mappings
 - analyze data collected during transition period and beyond

Code Mapping is...

- an attempt to translate equivalent meaning from source to target
- one source system code linked to one or more target system codes

ICD-9-CM Source→	≈	ICD-10-CM Target
599.7 Hematuria	≈	R31.0 Gross hematuria
599.7 Hematuria	≈	R31.1 Benign essential microscopic hematuria
599.7 Hematuria	≈	R31.2 Other microscopic hematuria
599.7 Hematuria	≈	R31.9 Hematuria, unspecified

“equivalent meaning” meaning...

“an attempt to translate equivalent meaning from source to target”

- heavily dependent on the purpose of the map
 - clinical mapping focuses on all possible meanings contained in source system code
 - reimbursement mapping focuses on equivalent payment

Different is Good

- if the differences were not significant, no incentive to change
 - **clinical** equivalent not possible in many cases

O26.851 Spotting complicating pregnancy, first trimester		649.50 Spotting complicating pregnancy, unspecified episode of care	Stage of pregnancy (I-10)
O26.852 Spotting complicating pregnancy, second trimester	≠	649.51 Spotting complicating pregnancy, delivered	vs. Episode of care (I-9)
O26.853 Spotting complicating pregnancy, third trimester		649.53 Spotting complicating pregnancy, antepartum	
O26.859 Spotting complicating pregnancy, unspecified trimester			

ICD-10-CM

General Equivalence Mappings

- Presents all reasonable correspondences between the two code sets
- Consists of two general equivalence mappings (GEMs)
 - ICD-9-CM to ICD-10-CM
 - ICD-10-CM to ICD-9-CM
- Each file contains code pairs—one code from each set
 - Source or target system code may be used more than once
 - Additional information specified using flags

Presents All Reasonable Correspondences: All-inclusive

I-9 to I-10 GEM:

Single type entry for ICD-9-CM code 599.7

ICD-9-CM Source→	≈	ICD-10-CM Target
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599.7 Hematuria	≈	R31.1 Benign essential microscopic hematuria
599.7 Hematuria	≈	R31.2 Other microscopic hematuria
599.7 Hematuria	≈	R31.9 Hematuria, unspecified

Presents All Reasonable Correspondences: Rule-based

Sample Entry 2—I-10 to I-9 GEM:

I21.11 ST elevation (STEMI) myocardial infarction involving right coronary artery
Inferoposterior transmural (Q wave) infarction (acute)

I-10 Code	I-10 Description	I-9 Code	I-9 Description	Approximate [FLAG]	No Map [FLAG]	Combination [FLAG]
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	410.30	Acute myocardial infarction of <u>inferoposterior</u> wall, episode of care unspecified	1	0	0
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	410.31	Acute myocardial infarction of <u>inferoposterior</u> wall, initial episode of care	1	0	0
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	410.32	Acute myocardial infarction of <u>inferoposterior</u> wall, subsequent episode of care	1	0	0

Consists of Two GEM Files: I-9 to I-10 and I-10 to I-9

I-9 → I-10 + flags

6822	L03311	1	0	0	0	0
6822	L03312	1	0	0	0	0
6822	L03313	1	0	0	0	0
6822	L03314	1	0	0	0	0
6822	L03315	1	0	0	0	0
6822	L03316	1	0	0	0	0
6822	L03317	1	0	0	0	0
6822	L03319	1	0	0	0	0
6822	L03321	1	0	0	0	0...

I-10 → I-9 + flags

O045	63500	1	0	0	0	0
O045	63502	1	0	0	0	0
O045	63600	1	0	0	0	0
O045	63601	1	0	0	0	0
O045	63602	1	0	0	0	0
O045	63700	1	0	0	0	0
O045	63702	1	0	0	0	0

Additional Information Specified in Flags

- Read as 1=On, 0=Off
- Three different flags
 - Approximate
 - No Map
 - Combination

Approximate Flag 1 “On” = Approximate

The Approximate Flag

I-9 Code	I-9 Description	I-10 Code	I-10 Description	Approximate [FLAG]	No Map [FLAG]	Combination [FLAG]
599.7	Hematuria	R31.0	Gross hematuria	1	0	0
599.7	Hematuria	R31.1	Benign essential microscopic hematuria	1	0	0
599.7	Hematuria	R31.2	Other microscopic hematuria	1	0	0
599.7	Hematuria	R31.9	Hematuria, unspecified	1	0	0

No Map Flag 1 “On” = No Map

The No Map Flag

I-9 Code	I-9 Description	I-10 Code	I-10 Description	Approximate [FLAG]	No Map [FLAG]	Combination [FLAG]
V64.41	Laparoscopic surgical procedure converted to open procedure	<i>NoDx</i>	<i>No Description</i>	0	1	0
V64.42	Thoracoscopic surgical procedure converted to open procedure	<i>NoDx</i>	<i>No Description</i>	0	1	0
V64.43	Arthroscopic surgical procedure converted to open procedure	<i>NoDx</i>	<i>No Description</i>	0	1	0

Combination Flag 1 “On” = Combination

I-10 Code	I-10 Description	I-9 Code	I-9 Description	Approximate [FLAG]	Combination [FLAG]	Scenario	Choice list
Scenario 1							
T422x1	Poisoning by succinimides and oxazolidinones, accidental (unintentional)	966.2	Poisoning by succinimides	1	1	1	1
T422x1	Poisoning by succinimides and oxazolidinones, accidental (unintentional)	E855.8	Other specified drugs acting on central and autonomic nervous systems	1	1	1	2
Scenario 2							
T422x1	Poisoning by succinimides and oxazolidinones, accidental (unintentional)	966.0	Poisoning by oxazolidine derivatives	1	1	2	1
T422x1	Poisoning by succinimides and oxazolidinones, accidental (unintentional)	E855.8	Other specified drugs acting on central and autonomic nervous systems	1	1	2	2

Diagnosis GEMs User's Guide

Diagnosis GEM Documentation and User's Guide 2007 version

Diagnosis Code Set General Equivalence Mappings

ICD-10-CM to ICD-9-CM and ICD-9-CM to ICD-10-CM

2007 Version

Documentation and User's Guide

Preface

Purpose and Audience

This document accompanies the initial 2007 release of the National Center for Health Statistics (NCHS) public domain diagnosis code reference mappings of the International Classification of Diseases 10th Revision Clinical Modification (ICD-10-CM) and the International Classification of Diseases 9th Revision (ICD-9-CM) Volumes 1 & 2. The purpose of this document is to give readers the information they need to understand the structure and relationships contained in the mappings so they can use the information correctly. The intended audience includes but is not limited to professionals working in health information, medical research and informatics. General interest readers may find section 1 useful. Those who may benefit from the material in

GEMs User's Guide: Intro to Mappings

I-9 and I-10 Code Sets Compared:

Code Length and Set Size

	ICD-9-CM	ICD-10-CM
# of Characters	3-5 Numeric (+V and E codes)	3-7 Alphanumeric
# of Codes	~13,500	~68,000

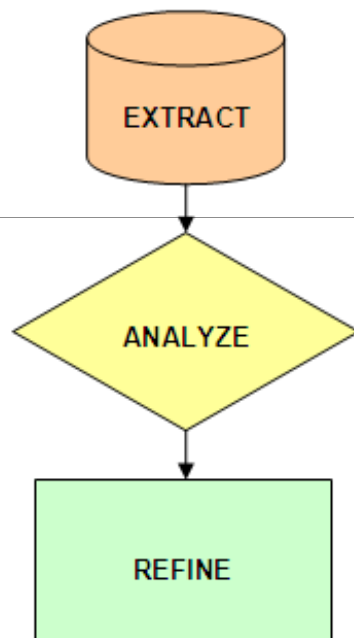
As shown in the table above, I-10 codes may be longer, and there are about five times as many of them. Consequently, in an unabridged I-9 to I-10 mapping, each I-9 code is typically linked to more than one I-10 code, because each I-10 code is more specific.

I-10 is much more specific than I-9, and, just as important for purposes of mapping, the level of precision in an I-10 code is more consistent within clinically pertinent ranges of codes. In I-9, on the other hand, the level of detail among code categories varies greatly. For example, category 733, Other disorders of bone and cartilage, contains the codes:

- 733.93 Stress fracture of tibia or fibula
- 733.94 Stress fracture of the metatarsals
- 733.95 Stress fracture of other bone

GEMs User's Guide: How to Use GEM Files

A general process for using the GEMs consists of three basic steps:



Step 1: EXTRACT

Select all rows containing the code in the source system.

Step 2: ANALYZE

Note any flags applied to the code and understand what they convey about the entry.

Step 3: REFINE

Select the row(s) of an entry that meet the requirements of an applied mapping.

GEMs User's Guide: Glossary

Diagnosis GEM Documentation and User's Guide 2007 version

Glossary

Approximate flag—attribute in a GEM that when turned on indicates that the entry is not considered equivalent

Applied mapping—distillation of a reference mapping to conform to the needs of a particular application (e.g., data quality, research)

Backward mapping—mapping that proceeds from a newer code set to an older code set

Choice list—in a combination entry, a list of one or more codes in the target system from which one code must be chosen to satisfy the equivalent meaning of a code in the source system

Combination flag—attribute in a GEM that when turned on indicates that more than one code in the target system is required to satisfy the full equivalent meaning of a code in the source system

GEMs User's Guide: File and Format Info

ICD-9-CM to ICD-10-CM General Equivalence Map (GEM)

FILE NAME: 2007_l9gem.txt

FILE FORMAT



FIELD	POSITION	LENGTH	VALUE
ICD-9-CM Code [source]	1 – 5	5	Left justified, blank filled No decimal
<i>Filler</i>	6	1	<i>Blank</i>
ICD-10-CM Code [target]	7 – 13	7	All seven characters used, no decimal
<i>Filler</i>	14	1	<i>Blank</i>
Approximate [FLAG]	15	1	1 = Yes/On 0 = No/Off
No Map [FLAG]	16	1	1 = Yes/On 0 = No/Off
Combination [FLAG]	17	1	1 = Yes/On 0 = No/Off
Scenario	18	1	0 – 9
Choice list	19	1	0 – 9



Documentation and User's Guide

- Posted on NCHS website with GEM files
 - <http://www.cdc.gov/nchs/about/otheract/icd9/icd10cm.htm>
- Revised as needed based on industry response